The role of positive emotions in child development: A developmental treatment of the broaden and build theory

By: Cynthia Sifter, Mairin Augustin, and Jessica Dollar

Stifter, C. A., Augustine, M., & Dollar, J. M. (2019). The role of positive emotions in child development: A developmental treatment of the broaden and build theory. *Journal of Positive Psychology, 15(1),* 89-94. 10.1080/17439760.2019.1695877

This is an Accepted Manuscript of an article published by Taylor & Francis in *Journal of Positive Psychology* on 22 November 2019, available online: http://www.tandfonline.com/10.1080/17439760.2019.1695877.

*****© 2019 Informa UK Limited, trading as Taylor & Francis Group. Reprinted with permission. No further reproduction is authorized without written permission from Taylor & Francis. This version of the document is not the version of record. *****

Abstract:

Historically, research on emotions in childhood has been dominated by studies on negative emotions. Consequently, little research has been conducted on the role of positive emotions. Recently, an alternative model of emotion proposed that positive emotions broaden thought-action patterns and build social, intellectual, and physical resources. In this paper, we review studies that examined the emotion of joy in child development and use the Broaden and Build Theory of Positive Emotions as a guide. It is well known that basic emotions are present at birth or emerge within the first two years of life. Thus, a new model of positive emotions would benefit from an understanding of their role in early life and how their broadening and building functions begin. It is our contention that results from past, and future, research on positive emotions will illustrate an important developmental foundation for a lifespan of social, intellectual and physical advantages.

Keywords: Development | joy | children | temperament

Article:

Historically, research on emotions in childhood has been dominated by studies on negative emotions. This is understandable, as negative emotions are detrimental to both mental and physical health. And although the expression of negative emotions is adaptive, particularly in early childhood, research has demonstrated that persistent negative emotionality has wide-ranging effects on all domains of child development. Consequently, little research has been conducted on the developmental role of positive emotions. The emergence of positive psychology renewed an interest in positive emotions in adulthood. In response to the difficulty of integrating positive emotions into existing models, Fredrickson (1998) proposed an alternative model she termed the Broaden-and-Build Theory of Positive Emotions. One of the central tenets of this model is that in contrast to the narrowing function of negative emotions, positive emotions are '*broadening*.' That is, whereas negative emotions are hypothesized to have specific

action tendencies in the service of adaptation and survival, the action tendencies of positive emotions are not necessarily specific but in many cases are nonspecific and less prescriptive. As such, positive emotions, according to Fredrickson, broaden a person's thoughts and actions by pursuing 'novel, creative, and often unscripted paths.'

Fredrickson (1998) also proposed that positive emotions, through broadening the individual's thoughts and actions, *build* enduring personal resources. Contrary to negative emotions, which have immediate beneficial effects for adaptation and survival, positive emotions have long-term benefits by building intellectual, social and physical reserves that can be drawn on to manage future threats. For example, positive emotions can be used to regulate or 'undo' negative emotions (Fredrickson, 1998).

In this paper we review the state of the science in positive emotions in child development using Fredrickson's Broaden and Build Theory (1998) as a guiding framework. Although some research with children was used to support Fredrickson's ideas, the theory is non-developmental. This is surprising given that two of the positive emotions considered in her review, joy and interest, are considered basic emotions that are present at birth or emerge within the first two years of life (Izard, 1991). Thus, a new model of positive emotions would benefit from an understanding of the early role of these emotions in development and how their broadening and building functions begin. As Fredrickson's model is 20 years old such a reevaluation is overdue.

The positive emotions that Fredrickson (1998) discussed in her model were joy, contentment, interest and love. The developmental research on these emotions is remarkably thin. Moreover, emotion labels such as 'joy' and 'interest' are rarely used. Developmental research, however, has demonstrated that expressions of joy (e.g., smiling/laughter) develop early in infancy, are structurally similar to adult smiling, and effectively function as social contagions that engage the proximal environment (Messinger & Fogel, 2007). For this reason, we focused on the emotion of joy and review studies of 'positive affect' and/or those that coded smiling and laughter to determine whether the developmental literature supports the broadening and building aspects of positive emotions. Because the term 'positive affect' has been predominantly used to describe the expressions, vocalizations and behaviors that connote joy we use it interchangeably with 'joy.' Finally, due to the lack of developmental research on interest, contentment and love we briefly discuss these emotions in closing.

Evidence for the broadening function of positive emotions in young children

Many studies of joy in children induced positive feelings to examine whether enhancing positive affect would have an immediate effect on cognitive or self-regulatory processes and thus might be conceived as evidence for the broadening effects of joy. To induce positive affect in young children, researchers presented amusing films or stories or asked children to think about a recent positive event. Manipulation checks were done, in most cases, by either observing children's expressions of positive affect (e.g., smiling) or obtaining reports of happiness. Although few in number, the results are consistent with the broadening function of joy. In three different studies in which positive affect was induced, children were shown to have better cognitive performance (Blau & Klein, 2010; Rader & Hughes, 2005), creativity and problem solving (Greene & Noice, 1988), and self-regulation (Yates, Lippett, & Yates, 1981) following induction.

Another set of studies has examined induced positive affect and socio-emotional outcomes. Positive mood inductions were related to quicker emotion processing in middle childhood (Cummings & Rennels, 2014), and a reduction of distress and increase in positive expectations following exposure to interadult anger (Davies & Cummings, 1995). Inducing a positive mood may also protect children against interpretation biases toward threat (Hughes & Kendall, 2008). Anxious children who viewed a slapstick comedy, and subsequently rated themselves as happier, were less likely to interpret ambiguous situations as threatening than those exposed to a neutral film. In an interesting twist on positive affect induction (Lennon & Eisenberg, 1987), a study of preschool children observed during peer interactions around one toy revealed that, compared to baseline, smiling occurred more often during an act of sharing by both the giver and the receiver. Similarly, a more recent study showed that toddlers were happier when sharing than when receiving a toy (Aknin, Hamlin, & Dunn, 2012). Thus, acts of sharing are often accompanied by joy in young children which, in turn, may lead to further engagement and positive emotions. Fredrickson (Fredrickson & Joiner, 2002) refers to patterns like this as the upward spiraling of positive emotions.

While these studies indicate the broadening effect of positive affect is observable in young children, positive affect can also be induced in infants, which appears to have consequences for their responses to new or potentially aversive stimuli. For example, research in social referencing, defined as the active use of a another person's emotional expressions to appraise an uncertain situation, has shown that when a parent uses a positive (smiling) expression the infant is more likely to interact with a stranger (Feinman & Lewis, 1983), play with toys (Stenberg & Hagekull, 1997), or cross the deep side of a visual cliff (Sorce, Emde, Campos, & Klinnert, 1985). Importantly, the infant's facial expressions of joy/smiling were coded in most of these studies, suggesting that the parent's positive expressions and contingent behavior are stimuli or contagions for the infant's feelings which, in turn, can broaden the infant's thought-action patterns by encouraging approach. Indeed, it is believed that in infancy meaningful and consequential smiling occurs only within an interactive context (Messinger & Fogel, 2007). Such contexts support the broadening of positive emotions and likely contribute to the building of resources for future regulatory needs.

Evidence for the building function of positive emotion in young children

We focused on the findings of longitudinal studies to support the hypothesis that positive affect builds cognitive, physical and social resources, because building resources understandably emerges with time or development. Moreover, relatively stable variations in positive affect are conceptualized as reflecting temperament, and are often combined with other temperament dimensions to create temperamental factors and types such as surgency and exuberance. Since the building process suggests some stability in positive emotions over time, we included research on the temperamental dimension of positive emotionality and the temperament factors/types including this dimension in our review.

Developmental research on positive affect has revealed a number of domains for which joy in childhood functions to build resources. As expected, in the socioemotional domain, positive affect is related to a number of behavioral outcomes including better emotion processing

(Schultz, Izard, & Bear, 2004) and higher levels of empathy, sympathy and helping behaviors (Schultz et al., 2004; Volbrecht, Lemery-Chalfant, Aksan, Zahn-Waxler, & Goldsmith, 2007). For example, a longitudinal study on infants and toddlers showed that high positivity, as measured by smiling/laughter, significantly predicted helping during three laboratory empathy tasks (Volbrecht et al., 2007). Children who exhibit high levels of positive affect are also found to be more socially competent as illustrated by higher peer ratings and prosocial behavior (Parlade et al., 2009; Schultz, Izard, Stapleton, Buckingham-Howes, & Bear, 2009; Shin et al., 2011). Indeed, a meta-analysis of 10 studies on the relationship between positive affect and peer social status showed a positive though small effect ($r = .16$; Dougherty, 2006). Data from a long-term study of human development found positivity in infancy and adolescence to predict higher levels of adult life satisfaction, and infant 'happiness' to be related to workplace hope and optimism in employed adults (Coffey, Warren, & Gottfried, 2015).

Sharing positive affect with another, in most cases the parent, also builds resources through socialization. A series of studies by Kochanska (Kochanska, 1997; Kochanska & Murray, 2000) have shown that children's level of shared positive affect with their parent during several different interactions relates to improved compliance and internalization of rules and standards or conscience development. Mutually responsive interactions characterized by high levels of positive affect are believed to contribute to the child's willingness to accept, conform to, and internalize parental moral messages of conduct and values. The building function of shared positive affect is also seen in studies of child behavior problems. When children were observed to exchange positive affect with parents and peers (Lunkenheimer, Olson, Hollenstein, & Sameroff, 2011; Sallquist, DiDonato, Hanish, Martin, & Fabes, 2012) they were less likely to develop problem behaviors. For example, shared positive affect with peers was related to positive adjustment and negatively related to poor peer relations (Sallquist et al., 2012).

Self-regulation, an important developmental process, also appears to be associated with high levels of joy; however, the findings are dependent upon the context in which the emotion was elicited (Kochanska, Aksan, Penney, & Doobay, 2007). When children's joy was expressed in familiar contexts (e.g., free play with the parent) then positivity was associated with better self-regulation. But, when joy was expressed during scripted procedures (e.g., bubbles, puppets, unpredictable toys) then positivity was related longitudinally to poorer self-regulation. These results point to the importance of understanding the underlying temperament of the child. Playful interactions with familiar persons can elicit positive affect from most children, but when the context changes to one of novelty or uncertainty, higher levels of positive affect are typically displayed only by children who are more approach-oriented (e.g., surgent or exuberant). This deficit in self-regulation for these children may explain why they are at risk for behavior problems, a finding that indicates that there may be a negative side to positivity (see below).

The use of positive affect/joy to cope with disappointment has been examined in young children as a form of emotion self-regulation (Cole, Martin, & Dennis, 2004). Children who smile when receiving an unwanted gift in the presence of the gift-giver have been found to have better developmental outcomes. For example, children who displayed more joy when disappointed had better emotion understanding (Garner & Powers, 1996), were rated as more socially competent by both peers and teachers (McDowell, O'Neil, & Parke, 2000), and for boys, rated by parents as less aggressive (Bohnert, Crnic, & Lim, 2003). Findings from our lab illustrate that the effects of

this ability to self-regulate depends upon the child's temperament. Exuberant children who expressed more positive affect when given an unwanted gift had fewer behavioral problems than exuberant children who expressed more negativity (Stifter, Putnam, & Jahromi, 2008). Similarly, Hayden, Klein, Durbin, & Olino (2006) found that higher child temperamental positive emotionality related longitudinally to fewer helpless cognitions in a social disappointment task. This research not only suggests that exuberant children may 'bank' their positive resources for future regulatory functions but also illustrates Fredrickson's (1998) conceptualization of positive emotions as 'undoing' negative emotions by countering narrow thought-action patterns with broader ones. Although it is not clear whether expressing joy in a social context is the same as experiencing joy, preschool-aged children's ability to either recruit positive feelings or display appropriate emotion expressions when disappointed may signal the onset of the ability to regulate negative emotions with positive emotions.

The role of joy in regulating emotion may be related to findings that positive affect acts as a protective factor against risk for behavioral and emotional problems. In a study of 4–7 year olds whose mothers had a history of childhood depression, expressing joy and anticipation of a toy during a delay task predicted lower scores on internalizing behaviors (Silk, Shaw, Forbes, Lane, & Kovacs, 2006). In a study of slightly older children, Lengua (2002) showed that positive emotionality significantly predicted children's resilience to multiple risks. Hence, the regulating effects of joy may extend beyond mildly negative experiences to help children manage a range of difficult circumstances.

Compared to the adult literature, no studies to our knowledge have examined whether positive affect in children is related to cognitive or academic outcomes with one exception; Gumora and Arsenio (2002) found positive affect to be related to better academic achievement in middle school children. Similarly, the role of children's positivity in garnering physical resources has not been examined. Humor, however, has been found to improve physical health by way of the increased antibody response in school-age children (Lambert & Lambert, 1995) and reduced infection in children with cancer (Dowling, Hockenberry, & Gregory, 2003).

The 'dark side' of joy

Whereas joy in childhood appears to have both broadening and building functions, some studies have found positive affect to be detrimental to development. However, the intensity level of positive affect and the traits that comprise temperamental exuberance or surgency may be the root of these negative outcomes. In adults, the negative impact of positive emotions is attributed to high-intensity approach motivation which is shown to narrow attentional focus (Gable & Harmon-Jones, 2010). Similar findings with infants and children show high levels of positive affect to impede immediate learning (Rose, Futterweit, & Jankowski, 1999) and attention to detail (Schnall, Jaswal, & Rowe, 2008). Likewise, high-intensity positive affect has been linked to greater anger/frustration (Putnam, Rothbart, & Gartstein, 2008) and declines in social skills across childhood (Sallquist, Eisenberg, Zhou, Liew, & Eggum, 2009). Temperamental exuberance and surgency have been associated repeatedly with the development of aggressive, externalizing behavior problems (Degnan et al., 2011; Stifter et al., 2008). As exuberance and surgency are also characterized by high levels of approach, impulsivity and activity level, it may be that these traits combined with intense positive affect increase this risk for problem behavior

rather than positive affect alone. Importantly, studies suggest that if exuberant children develop effective regulatory skills the risk for developing problem behaviors is diminished (Stifter et al., 2008).

Conclusions and future directions

Though they do not use the label 'joy,' studies that examine positive affect, specifically smiling, laughter, or ratings of happiness, demonstrate that the broadening and building function proposed by Fredrickson (1998) is observable early in life and appears to have significant developmental consequences. These findings are important as they indicate that positive affect, particularly in the context of social interaction, has benefits that may last a lifetime.

The broadening effect appears to start as early as infancy when infants use caregivers' positive affect to guide, specifically increase, their exploratory behavior. Likewise, studies indicate that inducing positive affect in preschool children leads to observed improvements in the cognitive and socioemotional domain. Positive affect engages the child and reinforces positive feelings, so regularly eliciting both momentary improvements in functioning and the child's desire to experience joy may help to foster coherence in the 'upward spiral' of positive affect over time. All humans have the capacity for joy, so encouraging or cultivating positive emotions, particularly within social interactions, appears to result in stronger social, cognitive, regulatory, and physical resources in the long-term.

There is growing evidence consistent with this developmental view of the broadening and building functions of positive emotions, but more research is needed. First, how does broadening contribute to the building of resources through development? Positive affect appears to motivate greater engagement with environmental stimuli, but also more-positive parent or peer socialization experiences. The mechanism(s) of effects may be wide-ranging. Secondly, how can children use positive emotions to 'undo' negative emotions? This may not be achieved with intentional displays of positive affect alone, but may instead rely on a deeper-seated ability to maintain broader or more-positive cognitions about one's experiences. Third, is it acceptable to interpret expressions of smiling/laughter as the experience of joy? Due to limitations in self-report in early development, more discussion of best practices for gathering developmental data on joy is warranted. Fourth, recognizing differences in the expression and correlates of temperamental positive emotionality, efforts should be made to explore the tendency to experience positive affect in familiar settings separate from the tendency to display high approach, activity level, or positive affect with highly-novel stimuli. Future studies should examine how the different characteristics of temperamental exuberance differentially and/or jointly predict positive and problematic outcomes, and how varying regulatory skills may attenuate risks associated with exuberance.

Lastly, and importantly, there is a need for more research on other types of positive emotions like interest, love, and contentment. Though the developmental literature on emotions tends not to use these labels, research on functionally-similar variables may inform our understanding. For example, we suggest examining constructs like orienting and executive attention as potential proxies for the experience of interest in early development. Similarly, as described by Bowlby (1969), early forms of love may be experienced or represented within attachment relationships.

Each of these constructs is well-studied in the developmental literature and found to have many positive outcomes. It is also likely that different positive emotions work cooperatively or bidirectionally to support improvements in functioning. For example, attachment encourages exploration and positive affect shared between the parent and young child fosters the development of a secure relationship. However, more research is needed to clarify these associations and how they interact to build resources. In any case, we anticipate that developmental perspectives on broaden-and-build processes will continue to shed light on the significant ways that positive affect contributes to health and well-being through the lifespan.

Disclosure statement. No potential conflict of interest was reported by the authors.

Funding. This work was supported by the John Templeton Foundation (43177); National Institute of Diabetes and Digestive and Kidney Diseases [DK081512].

References

Aknin, L., Hamlin, J., & Dunn, E. (2012). Giving Leads to Happiness in Young Children. *Plos One*, 7(6), e39211. Retrieved from 10.1371/journal.pone.0039211

Blau, R., & Klein, P. (2010). Elicited emotions and cognitive functioning in preschool children. *Early Child Development and Care*, 180, 1041–1052.

Bohnert, A., Crnic, K., & Lim, K. (2003). Emotional competence and aggressive behavior in school-age children. *Journal of Abnormal Child Psychology*, 31, 79–91.

Bowlby, J. (1969). *Attachment and loss*. New York: Basic Books.

Coffey, J., Warren, M., & Gottfried, A. (2015). Does infant happiness forecast adult life satisfaction? Examining subjective well-being in the first quarter century of life. *Journal of Happiness Studies*, 16, 1401–1421.

Cole, P., Martin, S., & Dennis, T. (2004). Emotion regulation as a scientific construct: Methodological challenges and directions for child development research. *Child Development*, 75(2), 317–333.

Cummings, A., & Rennels, J. (2014). How mood and task complexity affect children's recognition of others' emotions. *Social Development*, 23, 80–99.

Davies, P., & Cummings, M. (1995). Children's emotions as organizers of their reactions to interadult anger: A functionalist perspective. *Developmental Psychology*, 31, 677–684.

Degnan, K., Hane, A., Henderson, H., Moas, O., Reeb-Sutherland, B., & Fox, N. (2011). Longitudinal stability of temperamental exuberance and social–Emotional outcomes in early childhood. *Developmental Psychology*, 47(3), 765–780.

Dougherty, L. (2006). Children's emotionality and social status: A meta-analytic analysis. *Social Development*, 15, 394–413.

Dowling, J., Hockenberry, M., & Gregory, R. (2003). Sense of humor, childhood cancer stressors, and outcomes of psychosocial adjustment, immune function, and infection. *Journal of Pediatric Oncology Nursing*, 20, 271–292.

Feinman, S., & Lewis, M. (1983). Social referencing at ten months: A second-order effect on infants' responses to strangers. *Child Development*, 54, 878–887.

Fredrickson, B. (1998). What good are positive emotions? *Review of General Psychology*, 2(3), 300–319.

Fredrickson, B., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science*, 13(2), 172–175.

Gable, P., & Harmon-Jones, E. (2010). The motivational dimensional model of affect: Implications for breadth of attention, memory and cognitive catigorisation. *Cognition and Emotion*, 24, 322–337.

Garner, P., & Powers, T. (1996). Preschoolers' emotional control in the disappointment paradigm and its relation to temperament, emotional knowledge, and family expressiveness. *Child Development*, 67, 1406–1419.

Greene, R., & Noice, H. (1988). Influence of positive affect upon creative thinking and problem solving in children. *Psychological Reports*, 63, 895–898.

Gumora, G., & Arsenio, W. (2002). Emotionality, emotion regulation, and school performance in middle school children. *Journal of School Psychology*, 40, 395–413.

Hayden, E., Klein, D., Durbin, C., & Olino, T. (2006). Positive emotionality at age 3 predicts cognitive styles in 7-year-old children. *Development and Psychopathology*, 18, 409–423.

Hughes, A., & Kendall, P. (2008). Effect of a positive emotional state on interpretation bias for threat in children with anxiety disorders. *Emotion*, 8, 414–418.

Izard, C. (1991). *The psychology of emotion*. New York: Plenum.

Kochanska, G. (1997). Multiple pathways to conscience for children with different temperaments: From toddlerhood to age 5. *Developmental Psychology*, 33, 228–240.

Kochanska, G., Aksan, N., Penney, S., & Doobay, A. (2007). Early positive emotionality as a heterogenous trait: Implications for children's self-regulation. *Journal of Personality and Social Psychology*, 93(6), 1054–1066.

Kochanska, G., & Murray, K. (2000). Mother-child mutually responsive orientation and conscience development: From toddler to early school age. *Child Development*, 71(2), 417–431.

Lambert, R., & Lambert, N. (1995). The effects of humor on secretory immunoglobulin A levels in school-aged children. *Pediatric Nursing*, 21, 16–19.

Lengua, L. J. (2002). The contribution of emotionality and self-regulation to the understanding of children's response to multiple risk. *Child Development*, 73(1), 144–161.

Lennon, R., & Eisenberg, N. (1987). Emotional displays associated with preschoolers' prosocial behavior. *Child Development*, 58, 992–1000.

Lunkenheimer, E., Olson, S., Hollenstein, T., & Sameroff, A. (2011). Dyadic flexibility and positive affect in parent-child coregulation and the development of child behavior problems. *Development and Psychopathology*, 23, 577–591.

McDowell, D., O'Neil, R., & Parke, R. (2000). Display rule application in a disappointing situation and children's emotional reactivity: Relations with social competence. *Merrill-Palmer Quarterly*, 46, 306–324.

Messinger, D., & Fogel, A. (2007). The interactive development of social smiling. In R. Kail (Ed.), *Advances in child development and behavior* (pp. 327–366). New York: Elsevier.

Parlade, M., Messinger, D., Delgado, C., Kaiser, M., Van Hecke, A., & Mundy, P. (2009). Anticipatory smiling: Linking early affective communication and social outcome. *Infant Behavior & Development*, 32, 33–43.

Putnam, S., Rothbart, M., & Gartstein, M. (2008). Homotypic and heterotypic continuity of fine-grained temperament during infancy, toddlerhood, and early childhood. *Infant and Child Development*, 17, 387–405.

Rader, N., & Hughes, E. (2005). The influence of affective state on the performance of a block design task in 6- and 7-year-old children. *Cognition and Emotion*, 19, 143–150.

Rose, S., Futterweit, L., & Jankowski, J. (1999). The relation of affect to attention and learning in infancy. *Child Development*, 70, 549–559.

Sallquist, J., DiDonato, M., Hanish, L., Martin, C., & Fabes, R. (2012). The importance of mutual positive expressivity in social adjustment: Understanding the role of peers and gender. *Emotion*, 12, 304–313.

Sallquist, J., Eisenberg, N., Zhou, Q., Liew, J., & Eggum, N. (2009). Positive and negative emotionality: Trajectories across sis years and relations with social competence. *Emotion*, 9, 15–28.

Schnall, S., Jaswal, V., & Rowe, C. (2008). The hidden cost of happiness. *Developmental Science*, 11, F25–F30.

Schultz, D., Izard, C., & Bear, G. (2004). Children's emotion processing: Relations to emotionality and aggression. *Development and Psychopathology*, 16, 371–387.

Schultz, D., Izard, C., Stapleton, L., Buckingham-Howes, S., & Bear, G. (2009). Children's social status as a function of emotionality and attention control. *Journal of Applied Developmental Psychology*, 30, 169–181.

Shin, N., Vaughn, B., Akers, V., Kim, M., Stevens, S., Krzysik, L., … Korth, B. (2011). Are happy children socially successful? Testing a central premise of positive psychology in a sample of preschool children. *The Journal of Positive Psychology*, 6, 355–367.

Silk, J., Shaw, D., Forbes, E., Lane, T., & Kovacs, M. (2006). Maternal depression and child internalizing: The moderating role of child emotion regulation. *Journal of Clinical Child and Adolescent Psychology*, 35, 116–126.

Sorce, J., Emde, R., Campos, J., & Klinnert, M. (1985). Maternal emotional signaling: Its effect on the visual cliff behavior of 1-year-olds. *Developmental Psychology*, 21, 195–200.

Stenberg, G., & Hagekull, B. (1997). Social referencing and mood modification in 1-year-olds. *Infant Behavior & Development*, 20, 209–217.

Stifter, C., Putnam, S., & Jahromi, L. (2008). Exuberant and inhibited toddlers: Stability of temperament and prediction to behavior problems. *Development and Psychopathology*, 20, 401–421.

Volbrecht, M., Lemery-Chalfant, K., Aksan, N., Zahn-Waxler, C., & Goldsmith, H. (2007). Examining the familial link between positive affect and empathy development in the second year. *Journal of Genetic Psychology*, 168, 105–129.

Yates, G., Lippett, R., & Yates, S. (1981). The effects of age, positive affect induction, and instructions on children's delay of gratification. *Journal of Experimental Child Psychology*, 32, 169–180.